

1 10. A method for performing insertion and deletion operations  
2 on elements in a linked data structure, the method comprising  
3 the steps of:

4 (a) performing a first set of operation tasks in a first  
5 phase for each insertion and deletion operation, the  
6 first set of operation tasks operable to effect a  
7 first set of element state transitions;

8 (b) developing a second set of operation tasks for each  
9 insertion and deletion operation, the second set of  
10 operation tasks operable to effect a second set of  
11 element state transitions, the second set of element  
12 state transitions being distinct from the first set of  
13 element state transitions; and

14 (c) performing the second set of operation tasks in a  
15 second phase.

1 11. A method for executing operations upon a linked data  
2 structure having at least one element, the method comprising the  
3 steps of:

- 4 (a) queuing operation tasks in a task queue;  
5 (b) receiving the queued operation tasks;  
6 (c) performing a first set of operation tasks in a first  
7 phase, the first set of operation tasks operable to  
8 effect a first set of element state transitions;  
9 (d) developing a second set of operation tasks, the second  
10 set of operation tasks operable to effect a second set  
11 of element state transitions, the second set of  
12 element state transitions being distinct from the  
13 first set of element state transitions; and  
14 (e) performing the second set of operation tasks in a  
15 second phase.

1 12. The method of claim 11 further comprising repeating steps  
2 (a) through (e).

- 1 13. A method of inserting an element into a linked data  
2 structure comprising the steps of:
- 3 (a) performing a first set of operation tasks in a first  
4 phase, the first set of operation tasks operable to  
5 effect a first set of element state transitions  
6 including a pre-associated state to a pending insert  
7 state transition;
  - 8 (b) developing a second set of operation tasks, the second  
9 set of operation tasks operable to effect a second set  
10 of element state transitions including a pending  
11 insert state to a valid state transition; and
  - 12 (c) performing the second set of operation tasks in a  
13 second phase.